**Population Problems (IB ESS version)** *(taken from Hyke & Schneider)*

**You must show all of your work to get credit!**

*3.1.2 Calculate and explain, from given data, the values of crude birth rate, crude death rate, fertility, doubling time and natural rate of increase.*

1. One thousand two hundred and seventy deer are living on an island that is eight hundred and thirty square kilometers in size. What is the population density of the deer per square kilometer?

1. A city with 53,340 people has 876 births. What is the birth rate?

1. Another city experiences 12 deaths for each thousand people. What is the death rate?

1. A village of 23,473 people has 2,342 births and 473 deaths. What is the natural rate of increase?
2. A small country of 744,785 people has 44,678 immigrants and 12,567 emigrants. They also experience 15,898 deaths and 35,665 births. What is the natural rate increase of this small country?
3. How many years will it take for this country to double its population?

1. If a country were doubling its population every 35 years, what would its growth rate be?

1. In a large country there are 556 births one year. That same year, demographers count 3,000 women of childbearing age. What is the country’s fertility rate?
2. A small village in China has ten mothers who have the following numbers of children: 2,4,9,1,5,5,2,8,6,1. What is the Total Fertility for this village? If this trend continues, will this village shrink in size or increase in size?